

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Xin Yao § Group Art Unit: 2441
Application No.: 10/593,524 § Examiner: Ruolei Zong
371(c) Date: July 29, 2008 § Confirmation No.: 2772
For: METHOD AND APPARATUS FOR
IMPLEMENTING SIGNALING PROXY

CERTIFICATE OF EFS-WEB FILING

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Jerri Pearson

AMENDED APPEAL BRIEF

Dear Sirs:

This Amended Appeal Brief is filed in support of the appeal in the above-referenced application and is filed pursuant to the Notice of Non-Compliant Appeal Brief dated October 20, 2010, the Notice of Appeal filed on July 15, 2010, and the Pre-Appeal Panel Decision dated September 9, 2010. The Appellant authorizes all required fees under 37 C.F.R. § 1.17 to be charged to Deposit Account No. 50-1515, of Conley Rose, P.C. of Texas.

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I. REAL PARTY IN INTEREST

The real party in interest in the present application is the following party: Huawei Technologies Co, Ltd.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF CLAIMS

A. Total Number of Claims in the Application

Claims in the application: 1-28.

B. Status of All Claims in the Application

1. Claims canceled: 2, 3, 6, 7, 9, 10, 12, 15-20, and 25-27.
2. Claims withdrawn from consideration but not canceled: None.
3. Claims pending: 1, 4, 5, 8, 11, 13, 14, 21-24, and 28.
4. Claims allowed: None.
6. Claims objected to: None.
5. Claims rejected: 1, 4, 5, 8, 11, 13, 14, 21-24, and 28.

C. Claims on Appeal

Claims on appeal: 1, 4, 5, 8, 11, 13, 14, 21-24, and 28.

IV. STATUS OF AMENDMENTS

There are not any outstanding claim amendments.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Network address translation (NAT) is commonly used in voice over Internet Protocol (VoIP) systems. In NAT systems, user terminals view a signaling proxy (SP) as the destination of the user registration and calling information: the user registration and calling information is sent to a signaling proxy (SP), processed by the SP, and then forwarded to another server that is typically unknown to the user terminal. For the server, the SP is typically viewed as the end user: the server sends calling requests to the SP, the SP processes the request, and then forwards the request to the appropriate end user that is typically unknown to the server.

Being a device that operates at the application layer, the SP typically only processes messages that are specifically addressed to the SP (e.g. messages with the SP's address as the destination address). As shown in the Appellant's FIG. 2, the SP may be positioned between a router and the server. According to a common routing mode, only those messages having the SP's destination address are transmitted from the router to the SP for processing. Therefore, the SP can only receive and process signaling messages whose messages with the SP's address as the destination address.

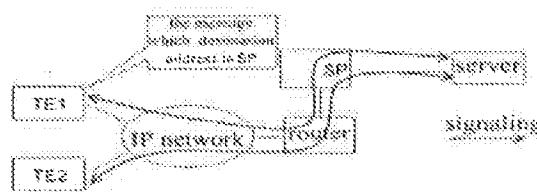


Fig.2

It can be easily seen that there are some limitations in networking in the above situation. For example, as shown in the Appellant's FIG. 3, TE1-1 and TE1-2 may be connected to SP1, and TE2-1 and TE2-2 may be connected to SP2. Since the SP only processes messages

specifically addressed to the SP, messages sent by TE1-1 and TE1-2 should be addressed to SP1, and messages sent by TE2-1 and TE2-2 should be addressed to SP2. However, such an implementation is cumbersome to deploy in real-world scenarios.

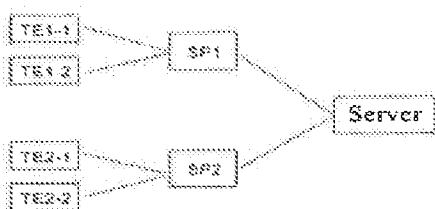


Fig.3

The present invention provides a method for implementing signaling proxy such that each user terminal can communicate with each SP through the same IP address or domain name. Such a method provides conveniences for easily deploying VoIP infrastructure.

This section provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by paragraph and line number.¹ Each element of the claims is identified with a corresponding reference to the specification where applicable. The citation to passages in the specification for each claim element does not imply that the limitations from the specification should be read into the corresponding claim element.

Independent claim 1 recites a method, comprising: receiving a message by a signaling proxy (SP), wherein the message has a source address and a destination address, *see, e.g., Application at ¶ 59, lines 1-5*; processing the message if the destination address of the message is

¹ 37 C.F.R. § 41.37(c)(1)(v) provides that the “[s]ummary of claimed subject matter ... shall refer to the specification by page and line number.” The instant application was presented in numbered paragraph form. As such, the citations to the specification will be presented in the following form: Application at ¶ ____ (paragraph number), lines ____ (lines within the corresponding paragraph). On the occasion where the pertinent paragraph is contained on multiple pages, the paragraph line numbering will carry over to the subsequent page.

different than a SP address and an address for which the message is intended, *see, e.g.*, Application at ¶ 55, lines 1-3, ¶ 56, lines 1-4, and ¶ 58, lines 1-4; and sending the message, *see, e.g.*, Application at ¶ 63, lines 1-2.

Independent claim 11 recites a signaling proxy (SP) apparatus, comprising: a receiving unit configured to receiving a message, wherein the message has a source address and a destination address, *see, e.g.*, Application at ¶ 59, lines 1-5; a processing unit configured to process the message if the destination address of the message is different than a SP address and an address for which the message is intended, *see, e.g.*, Application at ¶ 55, lines 1-3, ¶ 56, lines 1-4, and ¶ 58, lines 1-4; and a sending unit configured to send the message, *see, e.g.*, Application at ¶ 63, lines 1-2.

Independent claim 24 recites a system, comprising: a signaling proxy (SP) located between a terminal and a server; and a router located between the terminal and the SP, *see, e.g.*, Application in Fig. 7. The SP is configured to receive a message and process the message if at least one of a VPN ID, a VLAN ID, a MPLS ID, an IP protocol type, a source address, or a source port of the message meets a strategy of the SP, *see, e.g.*, Application at ¶ 36, lines 1-4, wherein the router is configured to forward the message to the SP according to a forwarding strategy, *see, e.g.*, Application at ¶ 77, lines 3-8.

VI. GROUNDS FOR REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1, 11, 22 and 23 are anticipated under 35 U.S.C. § 102(b) by U.S. Patent 6,754,709 (*Gbadegesin*).
2. Whether claim 24 is anticipated under 35 U.S.C. § 102(e) by U.S. Patent 7,146,410 (*Akman*).

3. Whether claims 4 and 13 are rendered obvious under 35 U.S.C. § 103(a) by *Gbadegesin* in view of U.S. Patent Application Publication 2002/0021688 (*Chen*)
4. Whether claims 5 and 14 are rendered obvious under 35 U.S.C. § 103(a) by *Gbadegesin* in view of *Chen* and *Akman*.
5. Whether claim 8 is rendered obvious under 35 U.S.C. § 103(a) by *Gbadegesin* in view of *Akman*.
6. Whether claim 21 is rendered obvious under 35 U.S.C. § 103(a) by *Gbadegesin* in view of *Akman* and U.S. Patent 7,574,522 (*Oguchi*).
7. Whether claim 28 is rendered obvious under 35 U.S.C. § 103(a) by *Akman* in view of *Oguchi*.

VII. ARGUMENTS

- A. To anticipate claims 1, 11, and 22-24, *Gbadegesin* must teach each and every element of claims 1, 11, 22, and 23, and *Akman* must teach each and every element of claim 24.**

Claims 1, 11, 22, and 23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Gbadegesin*. Claims 24 stands rejected under 35 U.S.C. § 102(e) as being anticipated by *Akman*. Claim 22 depends from independent claim 1, and claim 23 depends from independent claim 11. Thus, claims 1, 11, 22, and 23 stand or fall on the application of *Gbadegesin* to independent claims 1 and 11, and claim 24 stands or falls on the application of *Akman* to independent claim 24. According to the Court of Appeals for the Federal Circuit, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The Appellant respectfully asserts that *Gbadegesin* fails

to teach each and every element of independent claims 1 and 11, and consequently fails to anticipate claims 1, 11, 22, and 23. Similarly, the Appellant respectfully asserts that *Akman* fails to teach each and every element of independent claim 24, and consequently fails to anticipate claim 24.

B. To render obvious claims 4, 5, 8, 13, 14, 21, and 28, the cited prior art must disclose all of the elements of claims 4, 5, 8, 13, 14, 21, and 28.

Claims 4 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Gbadegesin* in view of *Chen*. Claims 5 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Gbadegesin* in view of *Chen* and *Akman*. Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Gbadegesin* in view of *Akman*. Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Gbadegesin* in view of *Akman* and *Oguchi*. Claim 28 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Akman* in view of *Oguchi*. The United States Supreme Court in *Graham v. John Deere Co. of Kansas City* noted that an obviousness determination begins with a finding that “the prior art as a whole in one form or another contains all” of the elements of the claimed invention. See *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 22 (U.S. 1966). The Appellant respectfully submits that the combination of *Gbadegesin* and *Chen* fails to disclose all of the elements set forth in claims 4 and 13, and consequently does not render obvious claims 4 and 13. The Appellant also submits that the combination of *Gbadegesin*, *Chen*, and *Akman* fails to disclose all of the elements set forth in claims 5 and 14, and consequently does not render obvious claims 5 and 14. In addition, the Appellant submits that the combination of *Gbadegesin* and *Akman* fails to disclose all of the elements set forth in claim 8, and consequently does not render obvious claims 8. Furthermore, the Appellant submits that the combination of *Gbadegesin*, *Akman*, and *Oguchi* fails to disclose all of the elements set forth in claim 21, and consequently does not render

obvious claim 21. Finally, the Appellant submits that the combination of *Akman* and *Oguchi* fails to disclose all of the elements set forth in claim 28, and consequently does not render obvious claim 28.

C. *Gbadegesin* fails to teach the DA of the message is different than a SP address and an address for which the message is intended in claims 1, 11 and 22-23.

Gbadegesin fails to anticipate claims 1, 11, 22, and 23 because *Gbadegesin* fails to teach that a SP processes a message if the destination address (DA) of the message is different than a SP address and an address for which the message is intended. Claims 1 and 11 read:

1. A method, comprising:

receiving a message by a signaling proxy (SP), wherein the message has a source address and a destination address;
processing the message if the destination address of the message is different than a SP address and an address for which the message is intended; and
sending the message.

11. A signaling proxy (SP) apparatus, comprising:

a receiving unit configured to receiving a message, wherein the message has a source address and a destination address;
a processing unit configured to process the message if the destination address of the message is different than a SP address and an address for which the message is intended; and
a sending unit configured to send the message.

(Emphasis added). As shown above, claims 1 and 11 require that a SP processes a message if the DA of the message is different than a SP address and an address for which the message is intended. In contrast, *Gbadegesin* discloses two proxy forwarding situations: (1) when the DA is the proxy address; and (2) when the DA is the address for which the message is intended. In the first case, *Gbadegesin*'s DA is the same as the proxy address:

Traditional proxies, as illustrated in FIG. 5, are application programs existing in the user mode 86 that serve as the interface between the private 60 and the public 64 network (see FIG. 6). Unlike NATs, the proxy 88 must be addressed directly by the client machines as seen in the destination address field 90 of message packet 92, and therefore requires that the client applications C₁, C₂, etc. be setup to operate with a proxy 88. Many applications cannot do this, or require specific configuration changes to allow the use of a proxy, and therefore a proxy configuration may not be appropriate, or even possible, for use with all applications.

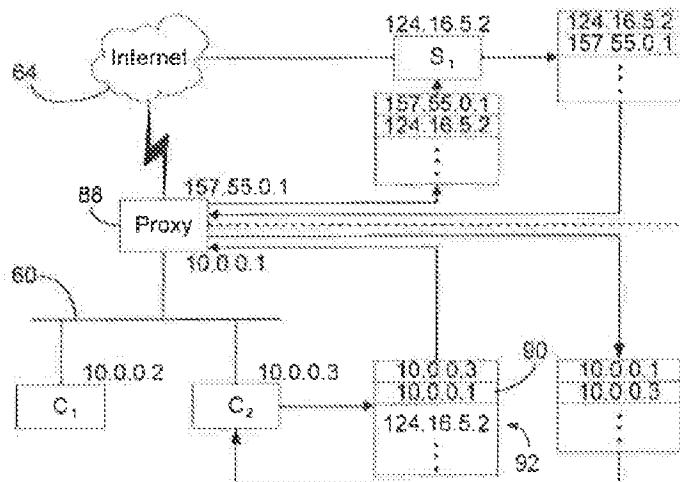


FIG. 6
(PRIOR ART)

Gbadegesin, col. 2, ll. 18-28 (emphasis added) and FIG. 6 (where the DA 90 of the message 92 sent from C₂ is the proxy 88 address). As shown above, *Gbadegesin's* DA is the same as the proxy address, and thus does not anticipate the claimed limitation. In the second case, *Gbadegesin's* DA is the same as the address for which the message is intended:

A further dynamic redirection that may be commanded by the intelligent transparent proxy of the instant invention is illustrated in FIG. 12. A client C₁ may wish to establish a session with server S₁ by addressing messages thereto. This is the apparent session from the client C₁'s point of view, as illustrated by the dashed line 124. However, when the gNAT machine 126 detects the message from C₁ addressed to S₁, it checks to determine if a dynamic redirect exists for such a session as discussed above. As illustrated in FIG. 12, a dynamic redirect 128 does exist to forward the message to the proxy session 141. The proxy may include a translation of both the source and destination addresses such that the messages are actually forwarded by the proxy to server S₂ with an indication that the source was C₂. From the server S₂'[s] point of view, an apparent session 130 has been established between S₂ and C₂. The actual session 132 that has been established is between C₁ and S₂, although neither C₁ nor S₂ knows that this is the case. Each of the required translations is accomplished transparently.

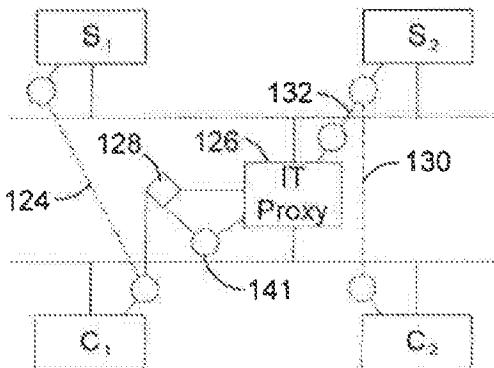


FIG. 12

Gbadegesin, col. 11, ll. 43-61 (emphasis added) and FIG. 12; *see also* FIG. 2. As shown above, *Gbadegesin*'s client: (a) wishes (i.e. intends) to send the message to server S₁; and (b) addresses the message to server S₁. Therefore, the DA of the message is the same as the address for which the message is intended, and thus does not anticipate the claimed limitation. While C₁'s message ultimately arrives at S₂, the above limitation requires that the DA be different than the address for which the message is intended (i.e. S₁), not that the DA be different than the address at which the message ultimately arrives (i.e. S₂). Thus, *Gbadegesin*'s DA is the same as the address for which the message is intended. As such, *Gbadegesin* fails to teach at least one limitation of independent claim 1, and consequently fails to anticipate claims 1, 11, 22, and 23.

D. *Akman* fails to anticipate claim 24 because *Akman* fails to teach a SP located between a terminal and a server.

Akman fails to anticipate claim 24 because *Akman* fails to teach a SP located between a terminal and a server. Claim 24 reads:

24. A system, comprising:

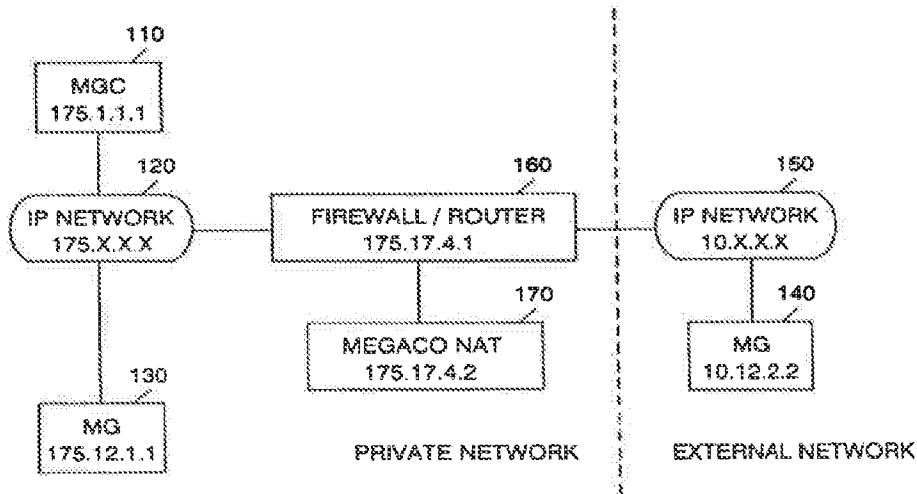
a signaling proxy (SP) located between a terminal and a server; and
a router located between the terminal and the SP,

wherein the SP is configured to receive a message and process the message if at least one of a VPN ID, a VLAN ID, a MPLS ID, an IP protocol type, a source address, or a source port of the message meets a strategy of the SP; and

wherein the router is configured to forward the message to the SP according to a forwarding strategy.

(Emphasis added). As shown above, claim 24 requires a SP located between a terminal and a server. The Examiner contends that *Akman's* MEGACO NAT server 170 in FIG. 1B corresponds to the claimed SP, *Akman's* media gateway (MG) 130 corresponds to the claimed terminal, and *Akman's* media gateway controller (MGC) 110 corresponds to the claimed server. See office dated May 10, 2010 (*office action*), pp. 6, 7, & 14. Assuming such is true (and without conceding such), *Akman* fails to teach the above limitations because *Akman's* MEGACO NAT is not located between the MG and the MGC:

FIG. 1B



Akman, FIG. 1B. As shown above, the only components between the MG and the MGC are the IP networks 120, 150 and the firewall/router 160. Thus, *Akman's* MEGACO NAT is not located between the MG and the MGC. The Examiner contends that *Akman's* col. 4, ll. 42-60 teach that the messages proceed allowing the following path: terminal → Firewall/Router 160 → MEGACO NAT 170 → Firewall/Router 160 → MGC. *See office action*, p. 14. However, claim 24 recites the physical connectivity of the SP, the terminal, and the server, not the message routing between the SP, the terminal, and the server. Thus, *Akman* fails to teach a SP located between a terminal and a server. As such, *Akman* fails to teach at least one element of independent claim 24, and consequently fails to anticipate claim 24.

E. The cited prior art does not render obvious claims 4, 5, 8, 13, 14, 21 and 28 because the combinations fail to disclose all the limitations of these claims.

Claims 4 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Gbadegesin* in view of U.S. Patent Application Publication 2002/0021688 (*Chen*). Claims 5 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Gbadegesin* in view of *Chen* and *Akman*. Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over

Gbadegesin in view of *Akman*. Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Gbadegesin* in view of *Akman* and U.S. Patent 7,574,522 (*Oguchi*). Claim 28 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Akman* in view of *Oguchi*. Claims 4, 5, 8, and 21 depend from independent claim 1, claims 13 and 14 depend from independent claim 11, and claim 28 depends from independent claim 24. Claims 1, 11, and 24 are allowable over the cited prior art for the reasons discussed above, thus claims 4, 5, 8, 13, 14, 21, and 28 are also allowable.

VIII. CONCLUSION

In view of the above arguments, the Appellant respectfully requests that the rejection of the claims be reversed and the case advanced to issue. If the Examiner feels that a telephone interview would advance prosecution of the instant application, then the Appellant invites the Examiner to call the attorneys of record.

The Commissioner is hereby authorized to charge payment of any further fees associated with any of the foregoing papers submitted herewith, or to credit any overpayment thereof, to Deposit Account No. 50-1515, of Conley Rose, P.C. of Texas.

Respectfully submitted,
CONLEY ROSE, P.C.

Date: 10/11/05

5601 Granite Parkway, Suite 750
Plano, Texas 75024
Telephone: (972) 731-2288
Facsimile: (972) 731-2289


Grant Rodolph
Reg. No. 50,487

ATTORNEY FOR APPELLANT

IX. CLAIMS APPENDIX

The text of the claims involved in the appeal is:

1. A method, comprising:

receiving a message by a signaling proxy (SP), wherein the message has a source address and a destination address;
processing the message if the destination address of the message is different than a SP address and an address for which the message is intended; and
sending the message.

2. - 3. (Canceled)

4. The method according to claim 1, wherein processing the message comprises:

replacing the destination address of the message with the address for which the message is intended; and
replacing the source address of the message with the address of the SP.

5. The method according to claim 4, further comprising:

receiving a response from an entity for which the message is intended;
replacing a destination address of the response with the source address of the message;
replacing a source address of the response with the destination address of the message;
and
sending the response.

6. - 7. (Canceled)

8. The method according to claim 1 further comprising:

before the SP receives the message, forwarding the message to the SP according to a forwarding strategy by a network device.

9. - 10. (Canceled)

11. A signaling proxy (SP) apparatus, comprising:

a receiving unit configured to receiving a message, wherein the message has a source address and a destination address;

a processing unit configured to process the message if the destination address of the message is different than a SP address and an address for which the message is intended; and

a sending unit configured to send the message.

12. (Canceled)

13. The apparatus according to claim 11,

wherein the processing unit is configured to replace the destination address of the message with the address for which the message is intended, and replace the source address of the message with the SP address.

14. The apparatus according to claim 13, wherein the receiving unit is further configured to receive a response from an entity for which the message is intended; and wherein the processing unit is further configured to replace a destination address of the response with the source address of the message and replace a source address of the response with the destination address of the message.

15. – 20. (Canceled)

21. The method according to claim 8, wherein the forwarding strategy comprises forwarding the message to the SP according to the destination address of the message.

22. The method according to claim 1, wherein the address for which the message is intended is an address of a terminal or an address of a server.

23. The apparatus according to claim 11, wherein the address for which the message is intended is an address of a terminal or an address of a server.

24. A system, comprising:

a signaling proxy (SP) located between a terminal and a server; and

a router located between the terminal and the SP,

wherein the SP is configured to receive a message and process the message if at least one of a VPN ID, a VLAN ID, a MPLS ID, an IP protocol type, a source address, or a source port of the message meets a strategy of the SP; and

wherein the router is configured to forward the message to the SP according to a forwarding strategy.

25. – 27. (Canceled)

28. The system according to claim 24, wherein the forwarding strategy comprises forwarding the message to the SP according to the destination address of the message.

X. EVIDENCE APPENDIX

None.

XI. RELATED PROCEEDINGS APPENDIX

None.